

Saudi Culture and the Potential Introduction of Digital Design Techniques: Influences and Interactions

By

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Certificate of Authorship and Originality

I certify that the work in this thesis has not previously been submitted for a degree, nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of Student

Dedication

This thesis is dedicated to my mother, Fizah, and my father, Sadagh, who taught me that working hard is part of life and will achieve dreams. Thank you for believing in me. Their love and prayers are what brought me where I am today. I also dedicate this thesis to my wonderful and loving wife, Rash. I would not have been able to accomplish this research without her support, deep understanding and profound encouragement through the happy and hard times. I also thank my father-in-law Hussain and mother-in-law Azizah for their prayers, love and support. Finally, I dedicate this thesis to my beloved sons, Abdulrahman and Abdulaziz, whose unconditional love and sweet spirits lifted and sustained me during the darkest hours.

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Abstract

This study investigates Saudi cultural constructs re the potential to use digital design techniques, and how these may relate to certain cultural and educational aspects, influence ways of thinking and processes of designing, and advance architecture in Saudi Arabia. The study analyses the characteristics of Saudi culture and architectural education as the direct source of contemporary Saudi architecture. It also questions the relationship between the cultural background and current Saudi architecture and architectural education, as well as cultural and educational aspects that could *prevent or challenge the use of digital design techniques*.

The main research question asks: What are the potential influences and interactions of introducing digital design techniques to Saudi culture, Saudi architecture and architectural education? What are the methods or tactics to make this introduction happen? Will digital design techniques be introduced to Saudi Arabia in the near future?

The research establishes Saudi culture, architecture, and architectural education; architectural digital design techniques and architecture as an outcome from other countries; and the limitations or challenges of using new digital design tools in *Saudi Arabia*. The study is guided by qualitative research techniques, using the following methods to collect and analysis data: interviews with academic staff and students in three Saudi universities, focus group interviews with Saudi architecture students completing their architecture degrees at Australian universities, interviews with Saudi computer science students also in Australian universities, and analysis of all the interviewees' views and expectations in relation to Saudi culture, architecture and architectural education, and the potential interaction with digital design techniques.

The study assumed there is a lack of knowledge – and application – of digital design techniques in Saudi architecture. There are some cultural aspects that could prevent the use of digital design techniques. Moreover, there is a challenge to change the usual way of architectural design. Finally, the use of digital design techniques is hard to understand and use compared to the current ways of architectural thinking and designing in Saudi Arabia.

The study finds that the perception of digital design techniques among Saudi architecture staff and students is a mix of positive and negative, and accepting and rejecting. Nevertheless, digital design techniques seem to be accepted. However, this is tied to gaining extra knowledge such as English, mathematics, programming languages and software, which are the main pillars of digital design techniques. Introducing these techniques to Saudi culture requires raising awareness of digital design techniques; an easy and smooth introductory period; and convincing Saudi culture of digital design techniques. Introducing these techniques will be achieved through architecture educators, architectural education, architecture students and computer science specialists.

The study is contributing to understand the new digital design techniques revolution at the three Saudi Arabia cultural levels (Saudi culture, architecture, and architectural education). More specifically, the role of these techniques in improving Saudi architecture, and in enhancing its architectural education.

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Austin, M. & Qattan, W. 2016, 'I'm a visual thinker' rethinking algorithmic education for architectural design', *Proceedings of the 21st International Conference of Computer-Aided Architectural Design Research in Asia*, Melbourne.

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